

Continued Coordinating Implementation of the Leon River Watershed Protection Plan

STATE NONPOINT SOURCE GRANT PROGRAM

TSSWCB PROJECT 17-54

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TEXAS STATE SOIL AND WATER CONSERVATION BOARD

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Acronyms

BMP – Best Management Practice
BRA – Brazos River Authority
USEPA – United States Environmental Protection Agency
IRNR – Institute of Renewable Natural Resources
LSHS – Lone Star Healthy Streams
NRCS – Natural Resources Conservation Service
OSSF – On-Site Sewage Facility
QPR – Quarterly Progress Report
SWCD – Soil & Water Conservation District
TCEQ – Texas Commission on Environmental Quality
TSSWCB – Texas State Soil & Water Conservation Board
TWON – Texas Well Owner’s Network
TWRI – Texas Water Research Institute
TMDL – Total Maximum Daily Load
WQMP – Water Quality Management Plan
WC – Watershed Coordinator
WPP – Watershed Protection Plan
WSC – Watershed Steering Committee

Executive Summary

A watershed protection plan (WPP) for the Leon River below Proctor Lake and above Belton Lake was developed with funding from the Texas State Soil and Water Conservation Board (TSSWCB) and the United States Environmental Protection Agency (USEPA). The WPP received final acceptance from the EPA in 2015. A full-time watershed coordinator position was considered critical in initiating and carrying out the implementation process by the watershed steering committee. The watershed coordinator has provided technical assistance to stakeholders, acquired additional funding for implementation strategies, coordinated outreach and education efforts, and assessed the most up to date water quality data to identify if implementation efforts have been successful. Over the last 10 months the watershed coordinator has submitted grant proposals to extend the watershed coordinator position through 2021. Education and Outreach efforts over the last two years included workshops, field days, and presentations that reached more than 250 individuals. Implementation efforts have proven successful with several stream segments, including the South Leon, being delisted, while several others have been proposed to be delisted by the Texas Commission on Environmental Quality (TCEQ).

Introduction

Project Background

Segment 1221 of the Leon River (Figure 1) is bound by Proctor Lake upstream and Belton Lake downstream. It is roughly 190 miles long and its watershed covers approximately 1,375 square miles including portions of Comanche, Bell, Erath, Hamilton, Coryell, and Mills Counties. The watershed is located in the Brazos River Basin and is a predominantly rural, agricultural watershed dominated by rangeland with some cropland. Forests cover a sizable portion of the watershed and significant dairy production exists in the northern portion of the watershed.

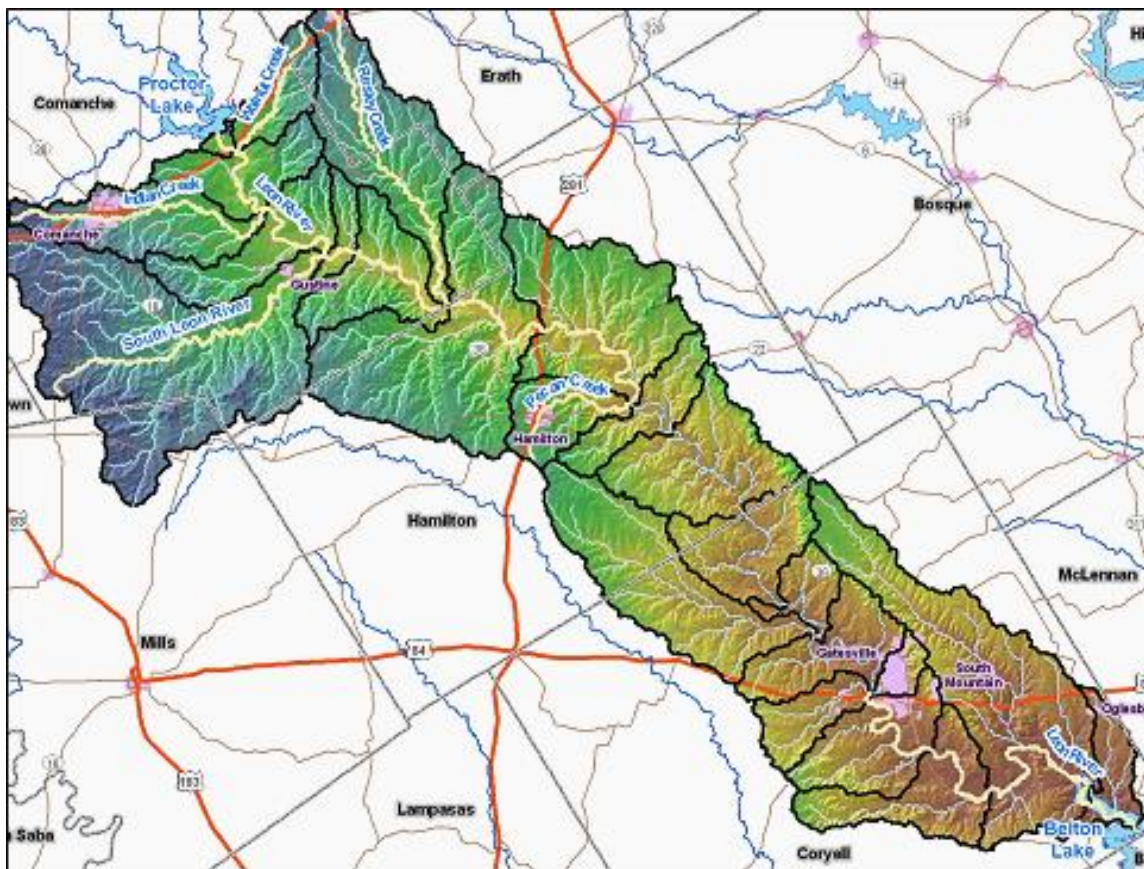


Figure 1. Map showing watershed and sub watershed boundaries associated with Segment 1221.

In 1996, Segment 1221 was placed on the Texas *303(d) List* of impaired waters for bacteria levels “Not Supporting Contact Recreation Use.” The 2008 *303(d) List* identified all but two of the segment’s assessment units as impaired or having a concern for near non-attainment resulting from elevated *E. coli* levels. Additionally, five tributaries of the Leon River have been listed as impaired for bacteria (1221A – Resley Creek, 1221B – South Leon River, 1221C – Pecan Creek,

1221D – Indian Creek, and 1221F – Walnut Creek); however, 1221C – Pecan Creek was delisted on the 2010 Integrated Report as it now meets the water quality standard for bacteria.

Placement of the Leon River on the §303(d) List caused the TCEQ to initiate development of a total maximum daily load (TMDL). A draft TMDL was published by TCEQ in 2008 that indicated a 21% bacteria load reduction would be needed to restore water quality in the Leon River. Sources of bacteria identified in the Leon River watershed included as wastewater treatment facility discharges, storm water runoff, failing on-site sewage facilities (OSSFs), wildlife and feral animals, as well as fecal deposition from livestock and pets.

In the midst of the TMDL development process, stakeholders sought to initiate the development of a voluntary watershed protection plan (WPP) for the Leon River. Through TSSWCB project 06-12, *Leon River Watershed Protection Plan Project*, the WPP for the Leon River below Proctor Lake and Above Belton Lake was completed in fall 2011. Similar to the draft TMDL, sources of bacteria identified in the Leon River WPP include wastewater treatment facilities, sanitary sewer overflows, direct deposition from feral hogs, deer, and dead animals, and storm water runoff from forestland, rangeland, cropland, residential commercial and industrial areas, and dairy waste application fields. The final WPP identified needed implementation measures and milestones, estimated financial costs for individual management measures and outreach and education activities, responsible parties, and load reductions expected from full implementation of all management measures.

Measures implemented to control bacteria from agricultural nonpoint sources include providing: 1) technical assistance to agricultural producers for development and implementation of Water Quality Management Plans (WQMPs) reducing bacteria loading from livestock operations; 2) financial incentives to agricultural producers for implementing best management practices prescribed in the WQMPs which will achieve bacteria load reductions; and 3) allocating Environmental Quality Incentives Program funds by the USDA Natural Resources Conservation Service (NRCS). Funding for development and implementation of WQMPs (1 and 2 above) was provided during Fiscal Year (FY) 2009-2013 through the NRCS Agricultural Water Enhancement Program project entitled *Water Quality Improvement Project for the Leon River*.

Management measures implemented to reduce impacts from invasive species in the watershed include aerial control of feral hogs in Coryell County using County funds. TSSWCB has also funded a feral hog extension position that conducts feral hog education programs in priority watersheds including the Leon River watershed.

Measures implemented to address bacteria loading from wastewater include: 1) wastewater treatment facility improvements by the cities of Comanche and Hamilton, as well as the Upper Leon River Municipal Water District; 2) identification and inspection of OSSFs in Hamilton

County; and 3) provision of technical and financial assistance to homeowners for the repair, replacement, or removal of OSSFs in Hamilton County.

Funding for OSSF inspection and technical and financial assistance in Hamilton and Coryell counties (2 and 3 above) was provided through a federal Clean Water Act §319(h) Nonpoint Source Grant administered by the TSSWCB and TCEQ from the U.S. Environmental Protection Agency.

The Brazos River Authority (BRA) served as the watershed coordinator (WC) through the development of the WPP. Since June 2013, the Texas Water Resources Institute (TWRI) and Texas A&M Institute of Renewable Natural Resources (IRNR) has served as WC via subcontract with the Central Texas Council of Governments and now direct contract with the TSSWCB. The WPP identifies the need for a full-time WC position stating, “Establishing a full-time WC position is considered a critical building block of the infrastructure needed by the watershed stakeholders to accelerate implementation of management strategies identified in the WPP.” This position provides technical assistance to the Watershed Steering Committee (WSC) and stakeholders, promotes water quality improvements and implementation, seeks funding for implementation of the WPP, coordinates outreach and education efforts, assesses water quality data in relation to achieving load reductions, and evaluates progress toward achieving milestones established in the WPP.

Through a local presence in watershed, the WC serves as the primary conduit for interaction with landowners, citizens, and entities to facilitate the implementation of the WPP. The WC coordinates meetings with the Leon River WSC and stakeholders, to update them, seek their input and recommendations on needed activities, and continue to support and facilitate implementation efforts of the plan. The watershed coordinator assists cities, counties, local boards and businesses with acquiring resources to enable WPP implementation. The WC works with state and federal agencies, as needed, to bring technical and financial assistance to the watershed.

As part of an adaptive management approach embraced by stakeholders, the WC evaluates progress toward achieving milestones established in the WPP and assesses water quality data in relation to achieving load reductions.

Coordination of outreach and education efforts by the watershed coordinator facilitates and supports participation by private individuals and local officials in the implementation of the Leon River WPP. The WC develops publications, such as semi-annual newsletters, factsheets, and website content to promote and communicate watershed efforts. Additionally, the watershed coordinator coordinates and conducts educational outreach efforts across the watershed by organizing training programs such as Lone Star Healthy Streams (feral hog, grazing cattle, horse,

and dairy cattle components), Riparian Workshops for Landowners, and Texas Watershed Stewards workshop.

Project Goals

- 1)** Facilitate the continued implementation of the Leon River WPP and foster coordinated assistance activities between the cities, counties, TSSWCB, local Soil and Water Conservation Districts (SWCD), NRCS, and members of the Leon River WSC by providing a local presence in the Leon River watershed.
- 2)** Conduct Leon River WSC meetings to provide updates on progress, seek stakeholder input and recommendations on needed activities, and encourage citizen participation.
- 3)** Support and facilitate the Leon River WSC in developing proposals to acquire funding for implementation of management measures, managing and tracking implementation projects, and facilitating education programs to encourage best management practice (BMP) adoption.
- 4)** Track and document implementation efforts to assess progress toward achieving milestones established in the WPP.
- 5)** Coordinate and conduct water resources and related environmental outreach/education efforts across the watershed, by developing publications and website content to promote and communicate watershed efforts, organizing training programs, and participating in local community clean up events.

Tasks & Accomplishments

Task 1 – Project Administration

The Leon River WC prepared electronic quarterly progress reports (QPR) and hosted various meetings and conference calls throughout the project. Project meetings discussed project activities, project schedule, communication needs, deliverables, and other issues.

Task 2 – Support and Facilitation of WPP Implementation

The Leon River WC worked continuously with local SWCDs, NRCS offices, County Commissioners, Extension Agents, Texas Parks and Wildlife Biologists, and many others to facilitate the implementation of the Leon River WPP. The WC regularly attended SWCD and Commissioner Court meetings to give updates on the Leon River WPP. The Leon River WC also hosted a Leon Watershed Stakeholder meeting in Hamilton to give an update on the status of the accepted Leon River WPP.

Acquisition of Financial and Technical Resources

The WC worked with various governmental and non-governmental organizations in the Leon River watershed to identify and acquire financial and technical resources for WPP implementation as follows:

- The WC was successful in securing a short-term grant through the TSSWCB to extend the Leon River WC position through September 2019.
- The WC wrote and submitted a proposal to TSSWCB to extend the Leon WC position for another 3 years. If funded, the WC will be supported through September 2021.
- The WC was able to secure an additional \$70,000 for OSSF replacements in Coryell County through an already existing grant with TCEQ.

Website, Newsletters, & Social Media

IRNR constructed and launched the watershed website (<http://leonriver.tamu.edu>) on June 6, 2013. The website serves as a public clearinghouse for project- and watershed-related information. Meeting announcements, agendas, presentations, documents, and results are posted to this website along with press releases, newsletters, and links to social media outlets and YouTube channel.

The Leon River Watershed also has an active Facebook page with 101 “Likes” and Twitter account with 137 followers. Water news, as well as education and outreach opportunities throughout the state, are highlighted through these social media platforms.

Finally, an electronic newsletter is distributed highlighting water news and workshops in Texas, as well as any policy relevant to water quality and/or quantity.

Trainings and Professional Development

Texas Watershed Coordinator Roundtables are held biannually to provide a forum for establishing and maintaining dialogue between watershed coordinators, facilitate interactive solutions to common watershed issues faced throughout the state, and add to the fundamental knowledge conveyed at the short courses. The WC attended each of the last four roundtable meetings in Temple, Dallas, and College Station.

The *James G. Teer Conservation Leadership Institute*'s mission is to ensure a future legacy of well-trained conservation leaders by providing professional training in leadership skills and contemporary conservation issues for today's wildlife biologists and conservation professionals. The Leon WC was one of ten young professionals chosen to participate in the second cohort. The cohort's primary project was identifying alternative funding for wildlife and natural resources at the state and federal levels. Many of the lessons learned from the project and leadership institute will be valuable in assisting with the implementation of the Leon River WPP.

Task 3 – Outreach, Education, and Community Support

Riparian Area Management Workshops for landowners and land managers

A free riparian workshop was held in Gatesville, Texas on June 8, 2017. Presentations focused on how streams function and the role of riparian vegetation in stream-system function and included speakers from TWRI, Texas A&M AgriLife Extension Service (AgriLife Extension), Texas Parks and Wildlife Department, and NRCS. Updates on the implementation of the Leon River WPP and feral hog abatement strategies in Coryell County were also discussed along with feral hog biology and abatement and NRCS landowner incentive programs. The riparian workshop was delivered by TWRI and made possible by a federal Clean Water Act §319(h) Nonpoint Source Grant administered by the Texas State Soil and Water Conservation Board from the U.S. Environmental Protection Agency.. There were 48 attendees at this event representing both landowners and agency personnel.

Leon River Watershed Stakeholder Meeting

A Leon River Watershed Stakeholder Meeting was held on September 7, 2017. There were 26 attendees including landowners, city and county officials, and agency personnel. The WC gave an update on the status of the Leon River, and took a look back at all of the BMP's that had been implemented in the watershed over the previous 10 years. A representative from TCEQ also discussed potential changes to the water quality standards and how they might affect the Leon River in the coming years.

Other Workshops and Educational Opportunities

Numerous other workshops and educational programs were supported by the WC including:

- Wildlife Conservation Camp – July 17-22, 2017. Topics included history and description of riparian areas, game bird management, using grazing exclusions to monitor range health, and introduction to radio telemetry.
- Statewide Quail Symposium – August 18-20, 2017. A biannual quail symposium was held to update landowners and managers on the current stats of the states quail population and results of various research projects that have been completed over the past 2 years.
- Bell County Landowner Workshop – Bell County, September 21, 2017. The WC gave a 45 minute presentation on Riparian Area Management to more than 125 attendees.
- Career Day – Gatesville, Texas, December 20, 2018. Delivered a presentation on Careers in Natural Resources to 6th grade students.

Future Leon River Watershed Activities

The Leon River WC will continue to reach out to affected parties and engage the public in the implementation process. The WC will continue to attend SWCD meetings regularly, coordinate and market OSSF cost share programs, obtain external funding to support watershed activities, maintain website and social media platforms, and generally support all Leon River watershed implementation efforts by holding a variety of outreach and education events throughout the watershed.

The WC will continue to maintain and expand a database of watershed stakeholders and affected parties for use in engaging the public in the watershed planning process.

The WC will develop, publish, and distribute semi-annual e-newsletters designed to keep landowners and entities informed of ongoing WPP implementation activities, including water quality data collection and progress toward achieving milestones in the WPP. The newsletter will continue to be distributed, as most appropriate, to individual landowners and entities in the watershed.

Appendices

Leon River Watershed Workshop Agendas, Press Releases, & Flyers



Leon River Watershed Stakeholders Meeting

September 7, 2017

101 E Henry St, Hamilton, Texas

10am-Noon

Agenda

- 10:00 - Welcome and Introductions
- 10:05 - Leon River water quality update – Andy James
- 10:15 - Delisting of the Leon and South Leon Rivers – Andy James
- 10:20 - Hamilton County and Coryell County Septic programs – Billy Hopson & Andy James
- 10:30 - Coryell County Coordinated Hog Out Management Program Grants and feral hog program – Andy James
- 10:35 - WQMP program through the Hamilton-Coryell Soil and Water Conservation District (SWCD) – Cal Marshall
- 10:45 - Education and Outreach efforts – Andy James
- 10:50 - Implementation of Best Management Practices in the watershed – Andy James
- 11:00 - Proposed revisions to the standards in 2017 & update on 2014 standards – Joe Martin-Texas Commission on Environmental Quality

Funding for this project is provided by a state nonpoint source grant from the Texas State Soil and Water Conservation Board.

If you have any questions please contact Andy James at 254-223-3056.

Leon River Watershed Stakeholder Meeting set for September 7 in Hamilton

Contacts:

Andy James, 254-223-3056, Andy.James@tamu.edu

The Texas A&M Natural Resources Institute is hosting a Leon River watershed stakeholders meeting, September 7 from 10 a.m. – noon. The meeting will be held in Hamilton (101 E Henry St) on the second floor of the county annex and all residents in the watershed from Coryell, Hamilton, Erath, Mills, and Comanche counties are invited.

The meeting will include an update on the delisting of tributaries in the watershed and the current status of the water quality in the Leon River. Presentations about the current septic system replacement programs, feral hog programs, and water quality management plan program will also be given. A representative from the Texas Commission on Environmental Quality will also be present to discuss the 2014 water quality standards and any upcoming revisions to the 2017 standards in the state of Texas.

“The meeting will provide an opportunity for stakeholders to learn about the current status of the Leon River and many of the projects and strategies that have been implemented across the watershed in recent years to improve water quality between Proctor and Belton Lakes. There could also be several updates to the state-wide water quality standards that could affect the Leon River watershed,” stated Andy James, the Leon River Watershed Coordinator.

Funding for this project is provided by a state nonpoint source grant provided by the Texas State Soil and Water Conservation Board.

If stakeholders are interested in attending they may contact Andy James by phone (254-223-3056) or email (Andy.James@tamu.edu).

Texas Riparian & Stream Ecosystem Training



Leon River: Gatesville, Tx ~ Agenda June 8, 2017

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- 8:00 Meeting Registration
 - 8:15 Welcome & Introductions
 - 8:30 Program Overview, Watershed Management and Water Quality
 - Clare Entwistle, Texas Water Resources Institute
 - 9:15 How Creeks Function & Bear Creek Example
 - Melissa Parker, Texas Parks and Wildlife Department
 - 10:00 Break
 - 10:15 Riparian Vegetation
 - Ricky Linex, USDA Natural Resources Conservation Service (NRCS)
 - 11:00 Management Practices, Local Resources and Photo Monitoring of Streams
 - Clare Entwistle, Texas Water Resources Institute
 - 11:45 Lunch
 - 12:00 Lunch time Presentation: Leon Watershed Protection Plan Overview
 - Andy James, Natural Resources Institute
 - 12:15 Role of Forests and Trees in Watershed Protection
 - Lori Hazel, Texas A&M Forest Service
 - 1:00 Role of the Texas Comptroller's Office with Freshwater Mussels
 - Kimberly A Horndeski, Texas Comptroller of Public Accounts
 - 1:30 Trip to the River (Split into 2 or more groups)
 - River Walk & Lane's Balance Demonstration Activity
 - Agricultural Nonpoint Source Incentive Programs: Kyle Wright, NRCS
 - Feral Hog Education: Josh Helcel, Texas A&M AgriLife Extension
 - 4:00 Wrap up and Head for Home!

<http://texasriparian.org/> and <https://www.facebook.com/TexasRiparianAssociation>



Riparian, stream ecosystem workshop for Leon River watershed set for June 8

Contacts: Nikki Dictson, 979-458-5915, n-dictson@tamu.edu
Robert Ferguson, 254-865-2414, Robert.Ferguson@ag.tamu.edu
Andy James, 254-865-2061, Andy.James@tamu.edu

GATESVILLE—The Texas Water Resources Institute's [Texas Riparian and Stream Ecosystem Education Program](#) will host a free workshop from 8 a.m.-4 p.m. June 8 in Gatesville for area residents interested in land and water stewardship in the Leon River watershed.

The morning session will be at the Gatesville Civic Center, 301 Veteran's Memorial Drive. The afternoon session will include a walk and presentations along the river.

The workshop is co-hosted locally by the Texas A&M Institute for Renewable Natural Resources and the Texas A&M AgriLife Extension Service in Coryell County.

The program will include a lunchtime presentation. A catered lunch will be provided for \$10 or attendees may bring their own lunch.

Register for lunch online at <http://bit.ly/2qTCCGj> or pay cash at the door.

All attendees must RSVP by June 2 to Dictson at n-dictson@tamu.edu, or 979-458-5915, or online at <http://texasriparian.org/upcoming-training-locations/>.

“Riparian education programs like this lead to informed landowners and members of the public more inclined to use practices that improve the management of riparian and stream ecosystems,” said Nikki Dictson, AgriLife Extension program specialist for the institute. “Proper management, protection and restoration of these vital areas directly influences water quality and quantity, plus stabilizes stream banks and improves fish and aquatic habitats and communities and more.”

The Leon River, a 190-mile stream in north Central Texas, is the focus of watershed planning efforts by local stakeholders, said Andy James, AgriLife Extension assistant and Leon River watershed coordinator.

“Stakeholders recognize that successful implementation of a watershed protection plan requires implementing a variety of management strategies,” James said. “The riparian and stream workshop is an educational event supporting this effort.”

Dictson said the workshop will focus on the nature and function of stream and riparian zones as well as the benefits and economic impacts from proper functioning riparian systems.

“Riparian areas – the green vegetated land area adjacent to the bank of a stream, creek, bayou, river or lake – are unique and important ecosystems that provide many benefits including habitat and forage,” Dictson said. “The goal of the workshop is for participants to better understand riparian and watershed processes, the benefits of healthy riparian areas and what resources are available to prevent degradation while improving water quality.”

Workshop presentations will be given by representatives of the Texas Water Resources Institute, U.S. Department of Agriculture's Natural Resources Conservation Service, AgriLife Extension, Texas Parks and Wildlife Department, the Texas A&M Forest Service and the Texas Comptroller of Public Accounts.

Dictson said they are able to offer the workshop without cost thanks to program funding provided through a Clean Water Act nonpoint source grant from the Texas State Soil and Water Conservation Board and the U.S. Environmental Protection Agency.

Robert Ferguson, AgriLife Extension agent for Coryell County, said participants will receive a certificate of completion and appropriate continuing education unit certificates at the conclusion of the training.

The workshop offers many types of continuing education units, including three units — two general and one integrated pest management — for Texas Department of Agriculture pesticide license holders. Foresters and professional loggers can receive six hours from the Texas Forestry Association and six hours from the Society of American Foresters. It offers one unit from the Texas Water Resources Institute, seven credits from Texas Floodplain Management Association, seven hours for Certified Crop Advisors, seven hours from the Texas Board of Professional Land Surveying and six hours for Texas Nutrient Management Planning specialists.

The program may also be used for continuing education units for professional engineers. The riparian education program is managed by the [Texas Water Resources Institute](#), part of Texas A&M AgriLife Research, AgriLife Extension and the College of Agriculture and Life Sciences at Texas A&M University.

For more information, contact Dictson or visit <http://texasriparian.org> or go to Facebook at <https://www.facebook.com/TexasRiparianAssociation>.